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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,018	12/17/2001	Wah Yiu Kwong	042390P11691	7243

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,018

Applicant(s)

KWONG ET AL.

Examiner

Alexander Jamal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 15-27 is/are pending in the application.
- 4a) Of the above claim(s) 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 16-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment (12-5-2005) via RCE, the examiner notes that claims 1,12,21,24 have been amended and claim 15 has been cancelled.
2. Examiner withdraws the objection to claim 24.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1,12,5,16,10,11,19,20** rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962), and further in view of Wood et al. (5754159).

As per **claim 1**, Katsura discloses a portable computing device that comprises a housing (Fig. 5), a display, and an antenna 14 mounted on the top layer of the display (Col 7 lines 4-25). However, Katsura does not specify what the display is made out of.

Wood discloses an efficient, small and inexpensive LCD display for a portable computer (Col 1 lines 55-65). Wood further discloses that the top layers is a glass layer

(ABSTRACT, Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of this application to implement the improved LCD display for the display in Katsura for the advantage of a more inexpensive, thin, and efficient display.

As per **claim 12**, claim rejected as a method performed by the claim 1 rejection.

As per **claim 5,16**, the device is a wireless communication terminal. It inherently comprises a transmit and receive amplifier for the purpose of conditioning the received/transmitted wireless signal (Col 5 lines 15-20).

As per **claims 10,11,19,20**, Katsura discloses that the device is a wireless data/voice device (Col 1 lines 1-35). This includes a PDA or PC-tablet.

5. Claims 2,3,13,14 rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962) in view of Wood et al. (5754159) as applied to claims 1,12 above, and further in view of Kuroe et al. (6028748).

As per **claims 2,3,13,14**, Katsura in view of Wood discloses claims 1 and 12, and that the antennas are microstrip antennas formed by printing or deposition (Col 3 lines 40-50), but does not specify the exact method by which they are coupled to the display.

Kuroe discloses that a microstrip line is produced by sputter etching on a substrate that may be made of glass (Col 10 line 44 to Col 11 line12). It would have been obvious to one of ordinary skill in the art at the time of this application that the well-known procedure of sputter etching could be used to put a stripline on a substrate.

6. Claims 6,7,17,18, rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962) in view of Wood et al. (5754159) as applied to claims 1,12,5,16, above, and further in view of Carson et al. (5705855).

As per **claim 6,17**, Katsura in view of Wood discloses applicant's claims 1,12,5,16, but does not specify that the RF circuitry is mounted to the display.

Carson discloses a communications device with a display (ABSTRACT) (Col 3 lines 40-60). Carson further discloses any conventional IC may be mounted to the under side of the LCD display on the glass substrate (Col 7 lines 14-25) with a chip-on-glass procedure. Carson teaches that this procedure can help in the miniaturization of communication devices (Col 1 line 65 to Col 2 line 10). It would have been obvious to one of ordinary skill in the art at the time of this application that any of the RF radio IC chips of Katsura could be mounted on the glass substrate of the LCD for the advantage of providing greater flexibility in design and miniaturization.

As per **claim 7,18**, the chip is mounted using glass on chip technology (Carson: Col 7 lines 14-25).

7. **Claims 8,9** rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962) in view of Wood et al. (5754159) as applied to claim 1, and further in view of Narayanaswamy et al. (5905467).

As per **claims 8,9**, Katsura in view of Wood discloses a wireless communication device as per claim 1. However, Katsura in view of Wood does not disclose that the mounted antenna is a center-fed or end-fed dipole antenna.

Narayanaswamy discloses a wireless communication device that may use (Col 3 lines 20-30) any of the well known types of antennas such as dipole antennas (including both end and center fed). It would have been obvious to one of ordinary skill in the art at the time of this application that any well known antenna structure could be utilized for the advantage of providing the optimal antenna shape for the particular environment the antenna is used in.

8. **Claim 21,26,27** rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962) in view of Wood et al. (5754159), and further in view of Carson et al. (5705855).

As per **claim 21**, Katsura in view of Wood discloses a device as per the claim 1 rejection, but does not specify that the RF (wireless) circuitry is mounted to the display.

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Carson discloses a communications device with a display (ABSTRACT) (Col 3 lines 40-60). Carson further discloses any conventional IC may be mounted to the under side of the LCD display on the glass substrate (Col 7 lines 14-25) with a chip-on-glass procedure. Carson teaches that this procedure can help in the miniaturization of communication devices (Col 1 line 65 to Col 2 line 10). It would have been obvious to one of ordinary skill in the art at the time of this application that any of the RF radio IC chips of Katsura could be mounted on the glass substrate of the display for the advantage of providing greater flexibility in design and miniaturization.

As per **claims 26,27**, Katsura discloses that the device is a wireless data/voice device (Col 1 lines 1-35). This includes a PDA or PC-tablet.

9. Claims 22-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (6628962) in view of Wood et al. (5754159) in view of Carson (5705855) as applied to claim 21, and further in view of Zuckerman (5802463).

As per **claim 22**, Katsura in view of Wood in view of Carson discloses claim 21. However they do not specify the details of the wireless interface circuitry.

Zuckerman discloses an RF transceiver with a network controller (comprised of parts of units 15 and 16 in Fig. 1) used to interface the transceiver with the network. It would have been obvious to one of ordinary skill in the art at the time of this application

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that the wireless systems would require network controllers for the purpose of interfacing with their respective networks.

As per **claim 23**, Zuckerman discloses a MAC dsp coupled to a baseband dsp (ABSTRACT).

As per **claim 24**, Zuckerman discloses a baseband state machine, a coding element and a modulation element in Fig. 3.

As per **claim 25**, a digital cell phone inherently requires an A/D and D/A in the signal paths for the purpose of providing the interface between the analog medium (free space) and the digital processing stages (Fig. 3).

Response to Arguments

10. Applicant's arguments with respect to claims 1-27 regarding the 'glass display' have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's arguments filed 12-5-2005 have been fully considered but they are not persuasive.

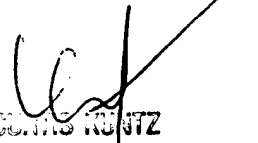
As per applicant's argument that Katsura does disclose mounting an antenna on the outer surface of a display, examiner cites Katsura, Col 7 lines 15-19. Examiner reads

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“provided on the outer rim of the display screen” as being mounted on the top layer of the display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.


CURTIS KUNTZ
SUPERVISOR
EXAMINER
JANUARY 2006

AJ
March 15, 2006